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Van Mierlo, Simon; Syriani, Eugene; Blouin, Dominique; Amrani, Moussa; Deantoni, Julien; Wimmer, Manuel

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Simon Van Mierlo
University of Antwerp
Flanders Make vzw
Antwerp, Belgium
simon.vanmierlo@uantwerpen.be

Eugene Syriani
Université de Montréal
Montréal, Canada
syriani@iro.umontreal.ca

Dominique Blouin
Télécom Paris
Paris, France
dominique.blouin@telecom-paris.fr

Moussa Amrani
Université de Namur
Namur, Belgium
Moussa.Amrani@unamur.be

Julien Deantoni
Université Cote d'Azur - Sophia Antipolis
Nice, France
julien.deantoni@univ-cotedazur.fr

Manuel Wimmer
CDL-MINT, Johannes Kepler University Linz
Linz, Austria
manuel.wimmer@jku.at

Tackling the complexity involved in developing truly complex, designed systems is a topic of intense research and development. System complexity has drastically increased once software components were introduced in the form of embedded systems, controlling physical parts of the system, and has only grown in Cyber-Physical Systems (CPS), where the networking aspect of the systems and their environment are of specific interest. The complexity faced when engineering CPS is mostly due to the plethora of cross-disciplinary design alternatives and inter-domain interactions.

To date, no unifying theory nor system design methods, techniques, or tools to design, analyze, and ultimately deploy CPS exist. Individual (physical systems, software, network) engineering disciplines offer only partial solutions and are no match for the complexity observed in CPS.

Multi-Paradigm Modeling (MPM) offers a foundational framework for gluing the several disciplines together in a consistent way. The inherent complexity of CPS is broken down by specifying each aspect of the system at the most appropriate level of abstraction, and allows for the modelling of different views on the system, each expressed in appropriate 2015, is aimed at further advancing the state-of-the-art as well as defining the future directions of this emerging research area by bringing together world experts from academia and industry.

The first edition of the Workshop on Multi-Paradigm Modeling for Cyber-Physical Systems (MPM4CPS) was held on September 15, 2019 in Munich, Germany, as part of the satellite events of the IEEE/ACM 22th International Conference on Model-Driven Engineering Languages and Systems (MODELS 2019).

We received nine submissions, out of which seven were accepted for publication in the proceedings and presentation during the workshop. The contributions to the workshop were organized into the following main clusters:

Fundamental Advances

- *Towards a Formal Specification of Multi-Paradigm Modelling* by Moussa Amrani, Dominique Blouin, Robert Heinrich, Arend Rensink, Hans Vangheluwe and Andreas Wortmann.